provided that none of this money should be expended until an "Engineering Survey" had been made by a Board appointed by the Government.

Such an "Engineering Survey" was made and the Engineering Board reported to Harold L. Ickes, Administrator of Public Works, on April 30, 1934. The change in order of construction procedure recommended in the report was approved by said Administrator May 10, 1934, and by the Board of Trustees of the Sanitary District May 17, 1934. This change in sequence of procedure was made the subject of a special supplementary Report to the Supreme Court, dated May 23, 1934, which after due notice to all the parties to this cause was, on May 28, 1934, received and ordered filed. These recommendations were that provision for the final treatment of the West Side sewage be deferred for the present and the available funds be used toward the construction of the South-Side portion of the West-Southwest Sewage Treatment Works. The Sanitary District of Chicago is now proceeding according to such recommendations and as reported to the Court in its supplementary report. Specifications are practically completed for the sewage pumping units and for the blower units. Preliminary plans have been drawn for the Sewage Pumping Station, Outdoor Electrical Sub-station, Aeration and Final Settling Tanks, Conduits, etc. Contracts for a considerable portion of this work can be let before the end of the current year.

Southwest Side Project. Since the receipt of the report of the special Engineering Board, appointed by the Public Works Administration, when it appeared probable that the Southwest Side Intercept-

ing Sewers could be financed from funds presently on hand, active design work has been started on these sewers. A survey party is engaged in completing field work necessary for the design and the hydraulics studies are being reviewed. A contract for digging test pits will be let in the near future.

It is expected that one or more contracts on the Southwest Side Intercepting Sewer can be let before the end of the current calendar year and that all of this sewer can be under contract within a year from date.

Activated Sludge Patent Suit. The suit of Edgar C. Guthard, Activated Sludge, Ltd. and Activated Sludge, Inc., versus The Sanitary District of Chicago, in the United States District Court for the Northern District of Illinois, Eastern Division (In Equity No. 4280), mentioned in the last report to the Court, was argued before Judge Walter C. Lindley on March 27 and 28, 1934. No decision has been rendered.

The suit brought against Milwaukee, which was decided for the plaintiff, Activated Sludge, Inc., by Judge Geiger (Activated Sludge, Inc. versus the City of Milwaukee, in Equity No. 2323, Eastern District of Wisconsin) was decided by the U. S. Circuit Court of Appeals for the 7th Circuit (The City of Milwaukee, Defendant Appellant, versus Activated Sludge, Inc., Plaintiff Appellee, U. S. Circuit Court of Appeals, 7th Circuit, No. 5001) in favor of the Plaintiff Appellee, Activated Sludge, Inc., on March 2, 1934. A rehearing was denied on April 13, 1934. Notice was then given to the Court of Appeals that an appeal would be taken to the U. S. Supreme Court.

While the suit against the Sanitary District has no direct bearing at present on the progress of the sewage treatment program, it is mentioned herein so that the Court may be advised of another element which tends to obstruct progress and may (if the patents are upheld) increase the cost of the works.

Financial. The financial condition of The Sanitary District of Chicago has been thoroughly discussed in previous semi-annual reports to the Supreme Court and in the report of Special Master McClennen of March 13, 1933.

The local tax situation has not improved much since the time of the last report to the Court. The amounts of taxes extended for the Sanitary District for the years 1928, 1929, 1930, 1931, and 1932, and the amounts collected up to June 7, 1934, pursuant to these extensions, are as follows:

Year	Total Taxes Extended	Amount Collected	Amount Unpaid	Percentage Unpaid
1928	$ 19,448,392.46	$17,100,971.53	$ 2,347,420.93	12.1%
1929	24,466,998.58	19,465,944.01	5,001,054.57	20.4%
1930	22,453,699.40	15,749,024.76	6,704,674.64	29.8%
1931	20,517,561.90	13,463,624.12	7,053,937.78	34.4%
1932	19,281,643.24	7,922,827.19	11,358,816.05	59.2%
	$106,168,295.58	$73,702,391.61	$32,465,903.97	30.6%

The 1932 real estate taxes are payable in two installments, the second of which does not become delinquent until July 1, 1934. The taxes collected since the time of the last report to the Court amount to $10,226,514.35, which is about 10 per cent of the taxes levied and due. This money was used to redeem tax anticipation warrants, to pay current expenses and to pay defaulted interest on bonds.

The non-payment of these taxes has forced the Sanitary District, through lack of revenue, to default on practically all payments of maturing principal on bonds used for construction work due from January 1, 1932 to June 1, 1934, inclusive, and a relatively small amount of interest on these bonds. The amounts in default, as of June 13, 1934, are:

Principal	$16,233,125.00
Interest	126,382.50
Total	$16,359,507.50

The interest in default amounted to a maximum of $6,370,268.75 on May 1, 1933 but this has been reduced to $126,382.50 since that time.

As stated in the last report to the Court, in view of the fact that the local tax situation was not likely to improve sufficiently in the near future to enable the payment of bonds in default from the receipt of taxes and thus make the Sanitary District bonds marketable, the Sanitary District conducted extended negotiations with the Federal Emergency Administration of Public Works. These negotiations resulted in agreements, dated December 16, 1933, under which the Public Works Administration purchased bonds of the Sanitary District in the principal amount of $41,938,000, at par plus accrued interest.

Construction work has been resumed or started on twelve contracts, for which $12,765,000 was allocated in the P. W. A. Agreements. Five other contracts, for which $3,412,000 was allocated, are in process of being let. Plans are well under way for four other contracts, for which $1,985,000 was allocated. These works, with the total allocation of

$18,162,000, will complete the Calumet Treatment Works, the Harvey Sewer, the West Side Treatment Works (for sedimentation and digestion) and the essential West Side Sewers.

As hereinbefore stated, one of the agreements with the Public Works Administration of December 16, 1933, provided that before any commitments were made in connection with the construction of the West-Southwest Treatment Works an "Engineering Survey" should be made by an Engineering Board appointed by the Government. The recommendations of this Engineering Board were reported to the Court on May 23, 1934. Negotiations are now under way with the Public Works Administration on an amended agreement which will set forth the changes in the program as recommended by this special Engineering Board and the necessary re-allocation of funds for this work. Conferences are being held between the Sanitary District and this Government Engineering Board relative to certain details of the changed program.

The total work accomplished by The Sanitary District of Chicago in the construction of sewage treatment works during the period from December, 1933 (the date of the summaries for the last report) to June 1, 1934, (the date of the summaries for this report), as measured by construction expenditures, was as follows:

TABLE 3.

Calumet Project	$ 438,259.74
North Side Project	17,390.59
West Side Project	617,772.50
Southwest Side Project	2,953.33
West-Southwest Treatment Plant	159,000.17
Total	$1,235,376.33

It is apparent from the prices bid on the contracts let within the past five months that there will be a saving of probably $2,000,000 in the costs estimated for the construction of the Calumet Sewage Treatment Works and the West Side Sewers. The exact amount of this saving will appear in future reports as the work nears completion. Some proportional saving might at this time be reasonably expected on other future work but this is impossible to estimate so far in advance. Approximately $600,000 was expended in the early part of June for construction work performed in the month of May 1934. This additional amount of work was actually performed during this report period but it will appear in the record of completed work in the next report to the Court. The monthly expenditures for construction will materially increase during the next six months.

By adding the various items indicated in Table 3 to corresponding items in Table 1, the completed portion of the sewage treatment construction program on June 1, 1934, is as follows:

TABLE 4.

COMPLETED WORK AS OF JUNE 1, 1934.

Calumet Project	$ 21,558,409.12
North Side Project	37,122,381.52
West Side Project	42,388,987.53
Southwest Side Project	326,205.71
West-Southwest Treatment Plant	159,000.17
Miscellaneous Plants and Sewers	596,188.86
Chicago River Controlling Works	53,415.74
Total	$102,204,588.65

By subtracting, in round figures, the various items indicated in Table 3 from corresponding items in Table 2, the estimated cost of future sewage treatment construction, as of June 1, 1934, is as follows:

TABLE 5.

FUTURE WORK AFTER JUNE 1, 1934.

Calumet Project	$ 13,612,000
North Side Project	5,375,000
West Side Project	12,460,000
West-Southwest Plant	42,538,000
Southwest Side Project	39,765,000
Miscellaneous Plants and Sewers	2,000,000
Chicago River Controlling Works (if necessary)	3,200,000
Total	$118,950.000

SEWAGE TREATMENT.

The population of The Sanitary District of Chicago, as of July 1, 1934, is about 4,267,000, according to estimates made from the figures of the 1930 census. The industrial wastes in the Sanitary District are assumed to be equivalent to the sewage of 1,758,000 additional persons. Hence, the total population and industrial wastes equivalent amount to 6,025,000. This figure includes the Corn Products wastes, equivalent to the sewage of 398,000 persons, which wastes have been greatly reduced, as a result of certain experimental work initiated by the Sanitary District.

The 1934 total population, and industrial waste equivalent, as above indicated, are estimated as 6,025,000. Up to date, the Sanitary District has assumed that sewage treatment could produce an annual average of 85 per cent purification. Hence, so-called complete treatment for the total June 1, 1934, population and industrial wastes equivalent would equal the 100 per cent treatment of the sewage of 5,121,000, which is 85 per cent of 6,025,000.

The expenditures for sewage treatment have been indicated in Tables 1, 3 and 4. The amounts of actual sewage treatment in operation on December 24, 1933 (as of the time of the last report to the Supreme

Court) and at the present time are shown in Tables 6 and 7, following:

TABLE 6.

ACTUAL SEWAGE TREATMENT IN OPERATION AS OF DECEMBER 24, 1933.

Treatment Works	Population Equivalent	Percentage Treatment	Treatment 100 Per Cent Basis
Calumet:			
(Complete treatment)	15,000	85	13,000
(Sedimentation)	215,000	33⅓	72,000
North Side	1,117,000	85	949,000
West Side (Sedimentation)..	757,000	33⅓	252,000
Miscellaneous (Morton Grove, Glenview, Northbrook) ...	6,000	85	5,000
Corn Products (Reduction)..	393,000		331,000
Total.....	2,503,000		1,622,000

TABLE 7.

ACTUAL SEWAGE TREATMENT IN OPERATION AS OF JUNE 25, 1934.

Treatment Works	Population Equivalent	Percentage Treatment	Treatment 100 Per Cent Basis
Calumet:			
(Complete treatment)	15,000	85	13,000
(Sedimentation)	219,000	33⅓	73,000
North Side	1,133,000	85	963,000
West Side (Sedimentation)..	763,000	33⅓	254,000
Miscellaneous (Morton Grove, Glenview, Northbrook) ...	7,000	85	6,000
Corn Products (Reduction)..	398,000		303,000
Total.....	2,535,000		1,612,000

The extent of the operation of sewage treatment plants at the present time is equal to the 100 per cent treatment of the sewage of 1,612,000 out of 5,121,000 persons, which would be the present possible 100 per cent treatment if the sewage of the total population and industrial wastes equivalent of 6,025,000 was being treated. This indicates the treatment of approximately 32.0 per cent of the total sewage within the Sanitary District, although considerable addi-

tional construction work has been performed during this period, for which no credit will appear in this percentage until the works are completed and put in operation.

DIVERSION OF WATER.

The net diversion of water from Lake Michigan during the calendar year 1933, averaged 6,270 cubic feet per second. The domestic pumpage of the Chicago metropolitan area during this period averaged 1,690 cubic feet per second; and the total flow from the Main Channel at Lockport averaged 8,005 cubic feet per second.

Diversion of water from Lake Michigan by the Sanitary District of Chicago since July 1, 1930, has been made in accordance with a Permit from the Secretary of War, dated June 26, 1930, which authorized the diversion of water as specified in the Decree of the Supreme Court, handed down April 21, 1930. This limits the net diversion to an annual average of not more than 6,500 cubic feet per second up to December 31, 1935. The average monthly diversion as made under this Permit from January 1 to June 20, 1934, is indicated in the table following:

Month 1934	Total Flow From Main Channel At Lockport C.F.S.	Inflow From Willow Springs Spillway C.F.S.	Domestic Pumpage Chicago Metropolitan Area C.F.S.	Net Diversion From Lake Michigan C.F.S.
January	7281	0	1598	5683
February	7144	0	1617	5527
March	7004	0	1599	5405
April	7955	0	1588	6367
May	8413	0	1738	6675
June 1 to 20..	8700	0	1800	6900
Average	7750	0	1657	6093

All of which is respectfully submitted,

THE SANITARY DISTRICT OF CHICAGO,

By THOMAS J. BOWLER,
Its President.

PHILIP HARRINGTON,
Its Chief Engineer.

WILLIAM ROTHMANN,
Its Attorney.

Attest:

JAMES J. SULLIVAN,
Clerk.